▶ RICARDO O. RODRIGUEZ AND AMANDA VIDAL, *Axiomatization of witnessed modal Gödel logic.*

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In the area of Knowledge Representation and Reasoning, it is crucial to find a homogeneous framework to represent and combine incompleteness, uncertainty, and vagueness. Gödel modal logic has proven to provide an adequate logical foundation for these tasks and has therefore been widely studied over the last decade.

Its semantics is usually given by Gödel Kripke models (G-*models*), which generalize classical Kripke semantics for modal logics. In these models, both the truth values of propositions at each world and the accessibility relation take values in the standard Gödel algebra $[0, 1]$, which is the algebraic semantics of the well-known intermediate Gödel logic. The minimal logics over G-models have been thoroughly investigated by Caicedo and Rodriguez in [1] and [2]. Nevertheless, these logics do not generally enjoy the finite model property.

In this talk, we axiomatize a logic which is semantically characterized by witnessed Gödel Kripke models. In such models, the truth value of a modal formula $\Box\varphi$ or $\Diamond\varphi$ at a world w coincides with, and is witnessed by, the value of $Rwv \to \varphi$ (resp. $Rvw\&\varphi$) at some world v. As a result, it satisfies the finite model property. We also axiomatize the witnessed version of the analogous logic over classical frames (from [3]).

[1] X. Caicedo and R.O. Rodriguez. Standard Gödel modal logics. *Studia Logica*, 94(2):189–214, 2010.

[2] X. Caicedo and R.O. Rodriguez. Bi-modal Gödel logic over [0,1]-valued Kripke frames. Journal of Logic and Computation, 25(1):37–55, 2015.

[3] R.O. Rodriguez and A. Vidal. Axiomatization of Crisp Gödel Modal Logic. Studia Logica, 109(2):367-395, 2021.